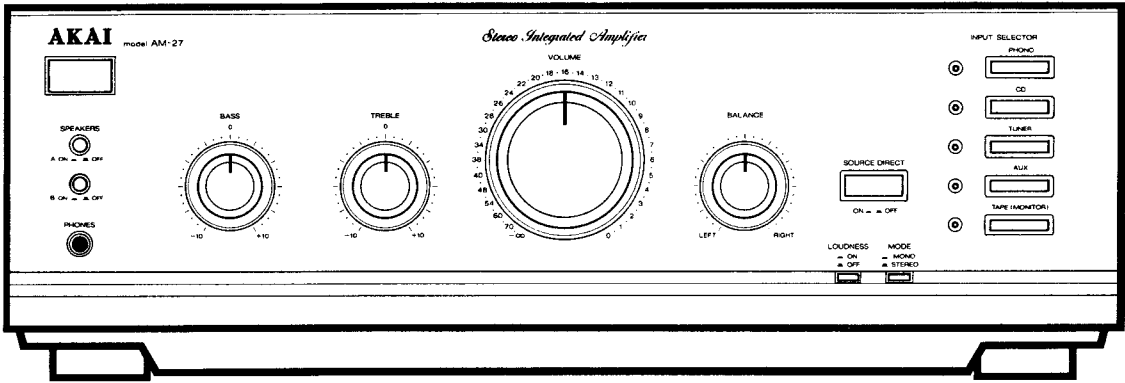


AKAI SERVICE MANUAL



MODEL AM-27

STEREO INTEGRATED AMPLIFIER

MODEL **AM-17**

MODEL **AM-27**

SPECIFICATIONS

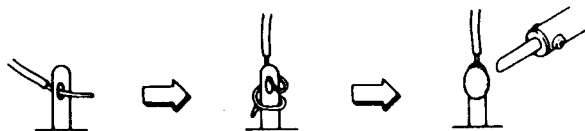
Power output (DIN)		S / N ratio (IHF-A)	
AM-17	35W + 35W (8 ohms,1kHz,1%)	Phono (MM)	70 dB
AM-27	60W + 60W (8 ohms,1kHz,1%)	Others	90 dB
Total harmonic distortion.. 0.05 %		Crosstalk	
Frequency response 20 Hz to 20 kHz (±0.5 dB)		Phono	60 dB (1kHz, 5.0 mV input level)
Tone control		CD	60 dB (1kHz, 500mV input evel)
Bass	±10 dB (100 Hz)	Required speaker impedance	
Treble	±10 dB (10 kHz)	A or B	8 to 16 ohms
Loudness (AM-27 only) .. 6 dB (100 Hz) / 4 dB (10 kHz)		A and B	8 to 16 ohms
Input sensitivity / impedance		Power requirement	
Phono (MM)	2.5 mV / 47 k ohms	AC220 V to 230 V, 50Hz for	
Others	150 mV / 47 k ohms	Europe except UK.	
Maximum input level		AC240 V, 50 Hz for UK and	
Phono	100 mV	Australia	
Others	6.0 V	Dimensions	
Output level		425 (W) x135 (H) x 285 (D) mm	
Tape REC out	150 mV	Weight	
Damping factor 27 (50 Hz, 8 ohms)		AM-17	6.1 kg
Residual noise 0.5 mV		AM-27	6.4 kg
Standard accessories			
Operator's manual 1			

* For improvement purposes, specifications and design are subject to change without notice.

★ SAFETY INSTRUCTIONS

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚡ (*) symbol are critical for safety. Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation.
These must also be replaced only with specified replacements.
Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
 - 1) Wires covered with PVC tubing
 - 2) Double insulated wires
 - 3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
 - 1) Insulation Tape
 - 2) PVC tubing
 - 3) Spacers (Insulating barriers)
 - 4) Insulation sheets for transistors
 - 5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).

7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

SAFETY CHECK AFTER SERVICING

After servicing, make measurements of leakage-current or resistance in order to determine that exposed parts are acceptably insulated from the supply circuit.

The leakage-current measurement should be done between accessible metal parts (such as chassis, ground terminal, microphone jacks, signal input/output connectors, etc.) and the earth ground through a resistor of 1500 ohms paralleled with a 0.15 μ F capacitor, under the unit's normal working conditions. The leakage-current should be less than 0.5 mA rms AC.

The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch (if included) "ON". The resistance should be more than 2.2 Mohms.

★ INFORMATION

SYMBOLS FOR PRIMARY DESTINATION

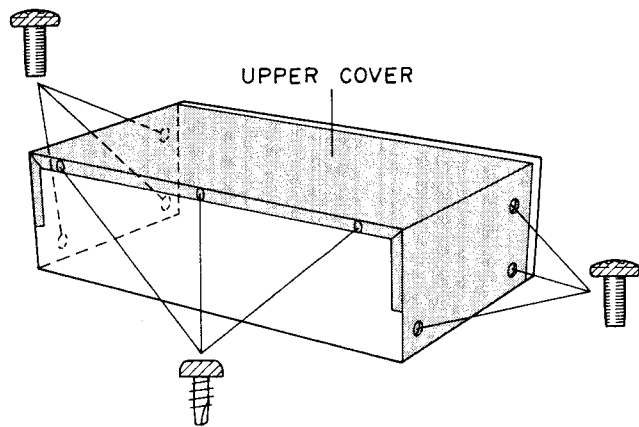
Alphabet indicates the destination of the units as listed below.

Symbols	Principal Destinations
B	UK
E	Europe (except UK)
S	Australia
V	Germany
U	Universal Area
Y*	Custom version

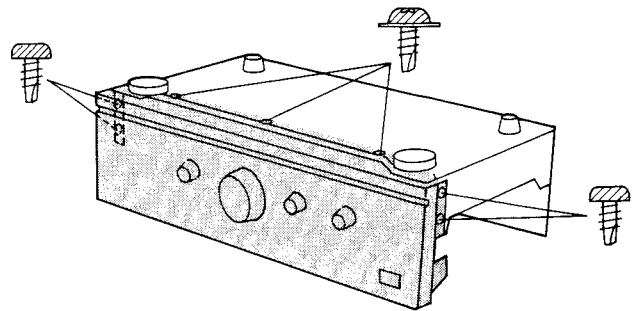
I. DISASSEMBLY

In case of trouble, etc., necessitating dismantling, please dismantle in the order shown in the illustrations.
Reassemble in reverse order.

1. Removal of the UPPER COVER



2. Removal of the FRONT PANEL BLOCK



II. PRINCIPAL PARTS LOCATION

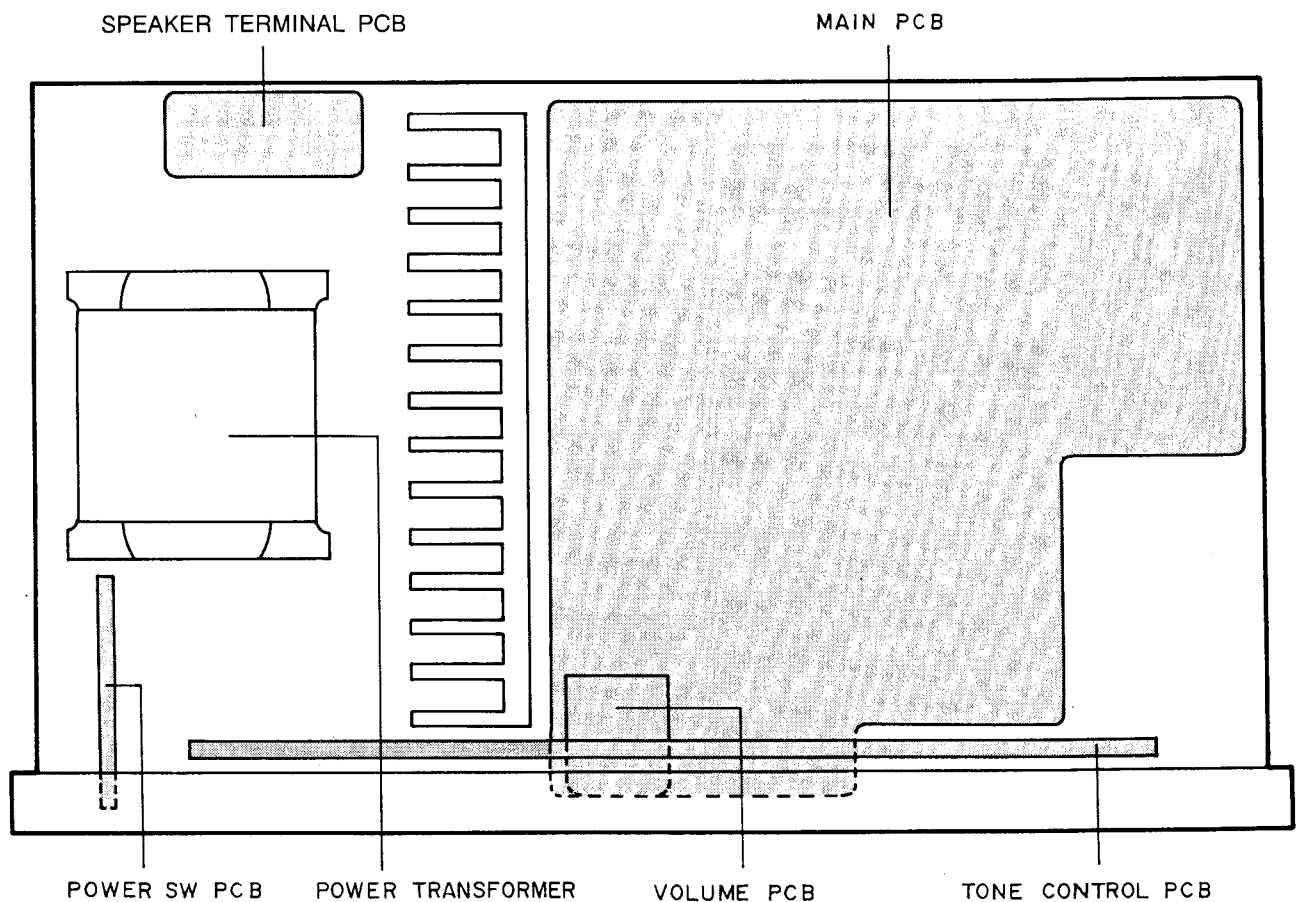


Fig. 2-1 Top view

III.ELECTRICAL ADJUSTMENT

3-1.IDLING CURRENT ADJUSTMENT

* This adjustment should be made after 5 minutes from turn the POWER on.

- 1) Set the VOLUME control to minimum (No signal input) and connect the 8 ohms dummy resistors to SPEAKER terminals.
- 2) Connect the DC digital voltmeter between R239 and TP101 (L-ch) / R238 and TP102 (R-ch) as shown in Fig.3-1.
- 3) Adjust VR201 (L-ch) / VR202 (R-ch) so that the reading on the DC digital voltmeter is 5 ± 1 mV.

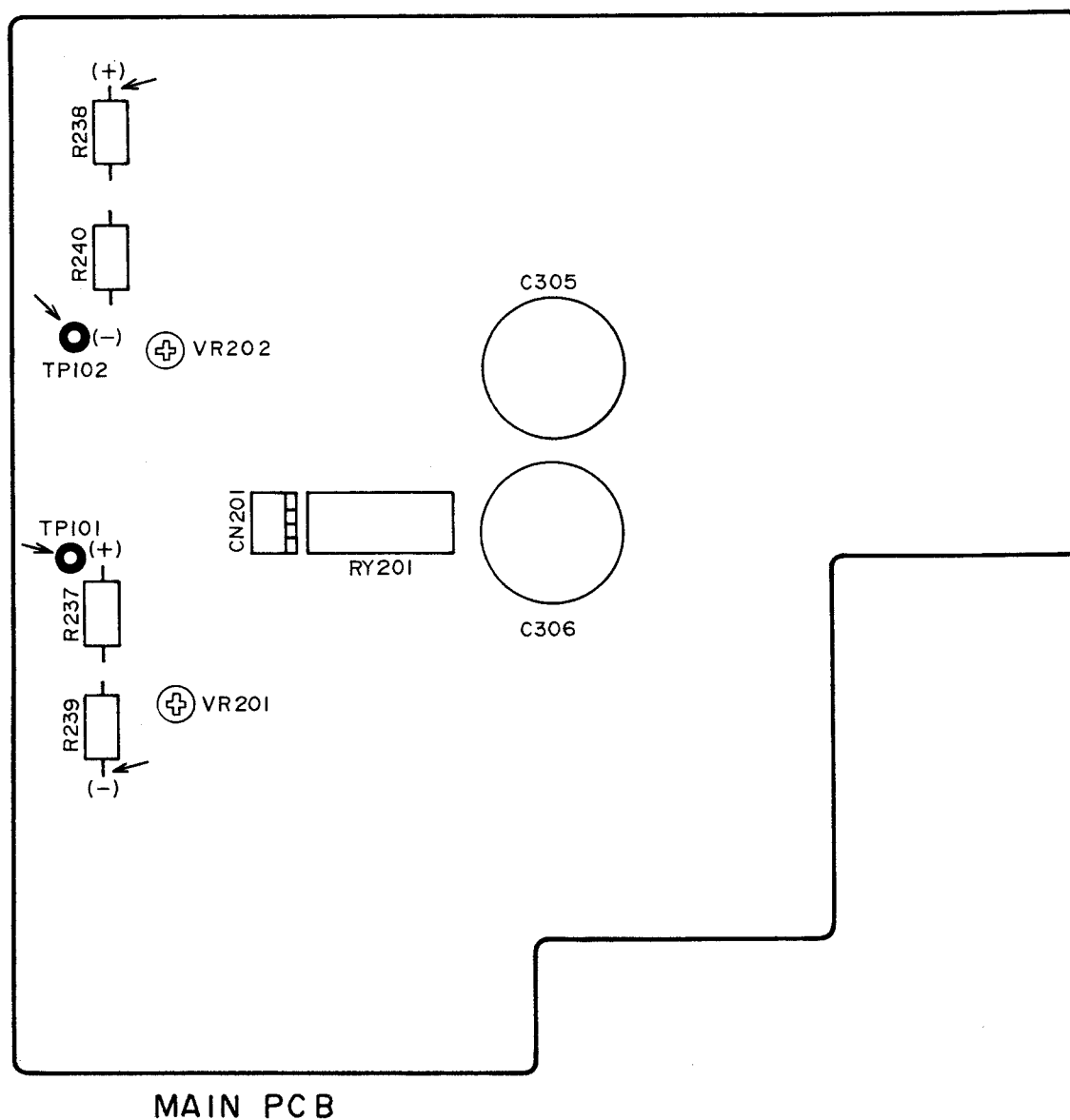


Fig. 3-1 Adjustment points

IV. PARTS LIST

ATTENTION

1. When placing an order for parts, be sure to list Part No., Model No. and the description of each part. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.
2. Please make sure that Part No. is correct when ordering. If not, a part different from the one you ordered may be delivered.
3. Since the parts shown in Parts List of Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the Parts List.

a) Mechanism Block

2. HEAD BASE BLOCK

Ref. No.	Part No.	Description
1	BH-T2023A320A	HEAD BASE BLOCK
2	HP-H2206A010A	HEAD R/P PR4-8FU C
3	ZS-477876	PAN20×03STL CMT
4	ZS-536488	BID20×08STL CMT
5	ZG-402895	SP CS ANGLE ADJUST

SP (Service Parts) Classification

This number corresponds with the individual parts index number in that figure.

b) PC Board

6. MAIN PC BOARD

Ref. No.	Part No.	Description
IC1	EI-324536	IC HD14049BP
IC2	EI-336801	IC MB8841-564M
C1A	EC-338399	C MMY V 223M 250AC [U,E,B,S]
C1B	EC-350949	C MMY V 223M 250DC [J]
C1C	EC-338397	C MMY V 223M 125AC [C,A]
X1	EI-318384	OSC X'TAL NC-18C

Symbols for primary destination

[A] : AAL (U.S.A) [S] : SAA (Australia)
[B] : BEAB (England) [U] : U/T (Universal Area)
[C] : CSA (Canada)
[E] : CEE (Europe) [V] : VDE (W. Germany)
[J] : JPN (Japan) [Y] : Custom Version

SP (Service Parts) Classification

These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No. listed at right of Part No.

WARNING

⚠ (*) INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.

AVERTISSEMENT

⚠ (*) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

1. RECOMMENDED SPARE PARTS

We suggest you to stock the following Recommended Spare Part items listed below since they can cover most of the routine service.

Ref.No.	Part No.	Description
1	*BT-735031K	TRANS POW A74-044Y-V AM-17(E) [E]
2	*BT-735001K	TRANS POW A74-045Y-V AM-27(E) [E]
3	*BT-735032K	TRANS POW A74-046Z-B AM-17(B) [B,S]
4	*BT-735002K	TRANS POW A74-047Z-B AM-27(B) [B,S]
5	ED-735025K	D LED DLG-503T
6	ED-735026K	D LED DLR-503T
7	ED-311852	D SILICON H 1S2471
8	ED-624903	D SILICON H 1S2473
9	ED-511907	D SILICON 1N4002 100/1.0A
10	ED-728444K	D SILICON 1N5402 200V 3A
11	ED-735022K	D ZENER MTZ13B [AM-27]
12	ED-735021K	D ZENER MTZ16B
13	*EF-601964	FUSE SEMKO T 250V 1.60A
14	EI-735082K	IC LC7818
15	EI-735047K	IC MC4558C
16	EI-201940	IC NJM4558S
17	EI-323564	IC TA7317P
18	EQ-735013K	RELAY HR-CR323D DC24V 2C1P-K
19	ER-318647	R FUSE H S10 ERD2FC 1/4W 4R7J
20	ER-735148K	R FUSE 1/2W 220J
21	ER-735083K	R FUSE 1/2W 271J [AM-17]
22	ER-735085K	R FUSE 1/2W 391J [AM-27]
23	*ES-735015K	SW PUSH SDL-1P [POWER SW]
24	ES-735086K	SW PUSH SPEA122SC011 [MODE SW,AM-27]
25	ES-735027K	SW PUSH SPEC-S-030 [SOURCE/DIRECT]
26	ES-735014K	SW PUSH TR2122189 2KEY [SPEAKER SW]
27	ES-735098K	SW TACT KHH10910L0 [PHONO]
28	ET-728750K	TR KTA1015 GR
29	ET-735004K	TR KTA1658 Y
30	ET-735006K	TR KTA949 Y
31	ET-735034K	TR KTA965 Y [AM-17]
32	ET-735024K	TR KTA970 GR [AM-27]
33	ET-735010K	TR KTB688 O
34	ET-728746K	TR KTC1815 GR
35	ET-735033K	TR KTC2235 Y [AM-17]
36	ET-735084K	TR KTC2240 GR [AM-27]
37	ET-735023K	TR KTC2878 B
38	ET-735005K	TR KTC3206 Y
39	ET-735003K	TR KTC4369Y
40	ET-735009K	TR KTD718 O
41	ET-735008K	TR 2SA1358 Y [AM-27]
42	ET-310920	TR 2SC1846 R,S
43	ET-735011K	TR 2SC3419 O [AM-27]
44	ET-735007K	TR 2SC3421 Y [AM-27]
45	EV-735030K	VR ROTARY RK16K1180 200KB [BALANCE]
46	EV-735029K	VR ROTARY RK16K1280 20KBX2 [BASS]
47	EV-735028K	VR ROTARY RK16312J0 100KBX2 [VOLUME]

2. P.C BOARD BLOCK

Ref.No.	Part No.	Description
1A	BA-735110K	MAIN PCB ASSY AM-17 (E)
1B	BA-735111K	MAIN PCB ASSY AM-27 (E)
2A	BA-735112K	TONE CONTROL PCB ASSY AM-17 (E)
2B	BA-735113K	TONE CONTROL PCB ASSY AM-27 (E)

MAIN BLK CONSISTS OF FOLLOWING P.C BOARD.

- MAIN P.C BOARD
- POWER P.C BOARD
- SPEAKER TERMINAL P.C BOARD

3. MAIN P.C BOARD

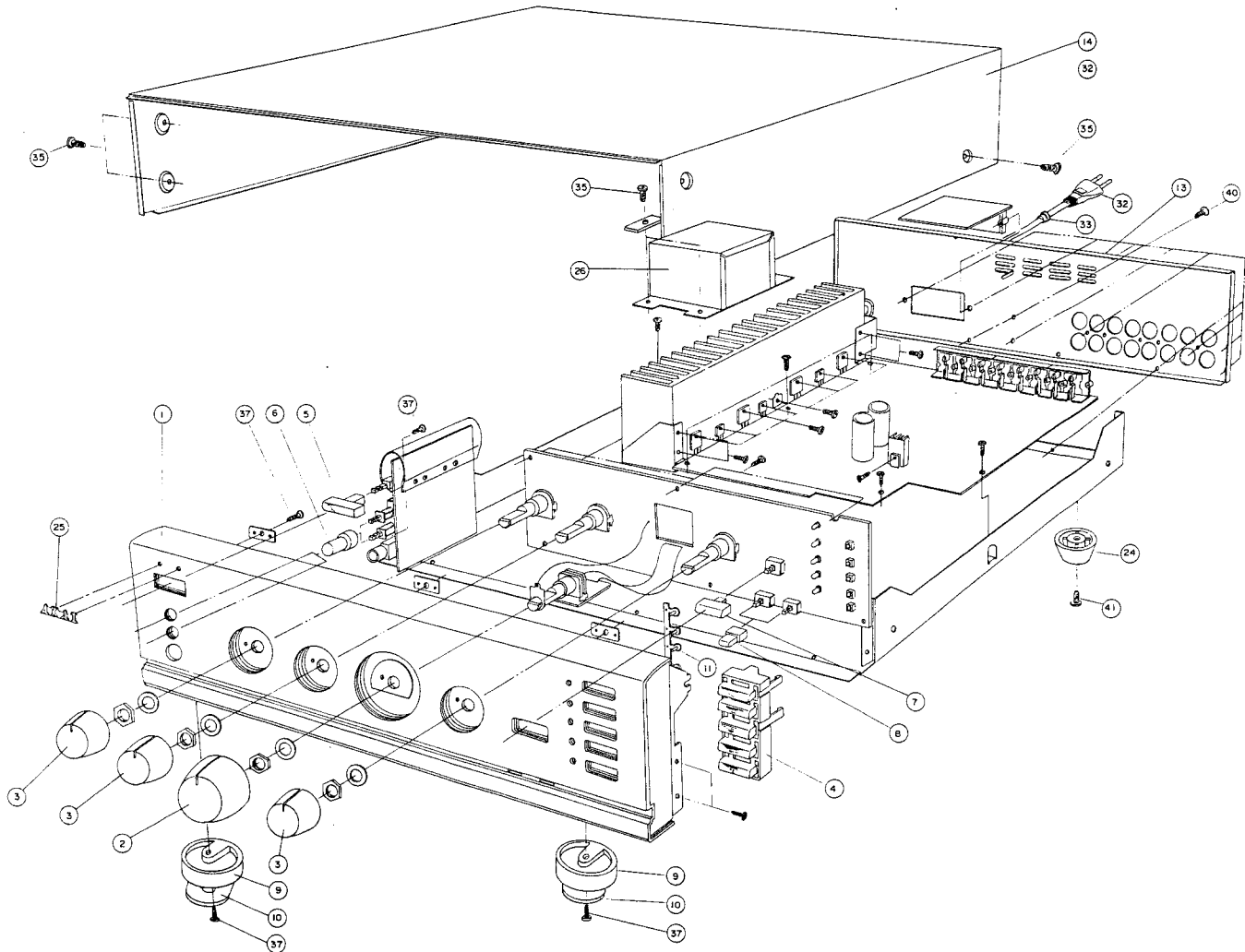
Ref.No.	Part No.	Description
D101	ED-311852	D SILICON H 1S2471
D102	ED-311852	D SILICON H 1S2471
D201	ED-624903	D SILICON H 1S2473
D202	ED-624903	D SILICON H 1S2473
D203	ED-624903	D SILICON H 1S2473
D204	ED-624903	D SILICON H 1S2473
D205	ED-624903	D SILICON H 1S2473
D206	ED-624903	D SILICON H 1S2473
D207	ED-624903	D SILICON H 1S2473
D208	ED-624903	D SILICON H 1S2473
D209	ED-624903	D SILICON H 1S2473
D210	ED-624903	D SILICON H 1S2473
D211	ED-735022K	D ZENER MTZ13B [AM-27]
D212	ED-511907	D SILICON 1N4002 100/1.0A
D301	ED-511907	D SILICON 1N4002 100/1.0A
D302	ED-511907	D SILICON 1N4002 100/1.0A
D303	ED-728444K	D SILICON 1N5402 200V 3A
D304	ED-728444K	D SILICON 1N5402 200V 3A
D305	ED-728444K	D SILICON 1N5402 200V 3A
D306	ED-728444K	D SILICON 1N5402 200V 3A
D307	ED-735021K	D ZENER MTZ16B
D308	ED-735021K	D ZENER MTZ16B
D309	ED-624903	D SILICON H 1S2473
IC101	EI-201940	IC NJM4558S
IC102	EI-735082K	IC LC7818
IC201	EI-323564	IC TA7317P
Q101	ET-728750K	TR KTA1015 GR
Q102	ET-728746K	TR KTC1815 GR
Q103	ET-728750K	TR KTA1015 GR
Q201A	ET-728746K	TR KTC1815 GR [AM-17]
Q201B	ET-735084K	TR KTC2240 GR [AM-27]
Q202A	ET-728746K	TR KTC1815 GR [AM-17]
Q202B	ET-735084K	TR KTC2240 GR [AM-27]
Q203A	ET-728746K	TR KTC1815 GR [AM-17]
Q203B	ET-735084K	TR KTC2240 GR [AM-27]
Q204A	ET-728746K	TR KTC1815 GR [AM-17]
Q204B	ET-735084K	TR KTC2240 GR [AM-27]
Q205A	ET-728746K	TR KTC1815 GR [AM-17]
Q205B	ET-735084K	TR KTC2240 GR [AM-27]
Q206A	ET-728746K	TR KTC1815 GR [AM-17]
Q206B	ET-735084K	TR KTC2240 GR [AM-27]
Q207	ET-728746K	TR KTC1815 GR
Q208	ET-728746K	TR KTC1815 GR
Q209	ET-735005K	TR KTC3206 Y
Q210	ET-735005K	TR KTC3206 Y
Q211	ET-735006K	TR KTA949 Y
Q212	ET-735006K	TR KTA949 Y
Q213	ET-310920	TR 2SC1846 R,S
Q214	ET-310920	TR 2SC1846 R,S
Q215	ET-728746K	TR KTC1815 GR
Q216	ET-728746K	TR KTC1815 GR
Q217	ET-728750K	TR KTA1015 GR
Q218	ET-728750K	TR KTA1015 GR
Q219A	ET-735033K	TR KTC2235 Y [AM-17]
Q219B	ET-735007K	TR 2SC3421 Y [AM-27]
Q220A	ET-735033K	TR KTC2235 Y [AM-17]
Q220B	ET-735007K	TR 2SC3421 Y [AM-27]
Q221A	ET-735034K	TR KTA965 Y [AM-17]
Q221B	ET-735008K	TR 2SA1358 Y [AM-27]
Q222A	ET-735034K	TR KTA965 Y [AM-17]

Ref.No.	Part No.	Description
Q222B	ET-735008K	TR 2SA1358 Y [AM-27]
Q223	ET-735009K	TR KTD718 O
Q224	ET-735009K	TR KTD718 O
Q225	ET-735010K	TR KTB688 O
Q226	ET-735010K	TR KTB688 O
Q227	ET-728746K	TR KTC1815 GR
Q228	ET-728746K	TR KTC1815 GR
Q229A	ET-728750K	TR KTA1015 GR [AM-17]
Q229B	ET-735024K	TR KTA970 GR [AM-27]
Q230	ET-735011K	TR 2SC3419 O [AM-27]
Q231	ET-735023K	TR KTC2878 B
Q232	ET-735023K	TR KTC2878 B
Q301	ET-735003K	TR KTC4369Y
Q302	ET-735004K	TR KTA1658 Y
R237	ER-735020K	R CT 2W R22
R238	ER-735020K	R CT 2W R22
R239	ER-735020K	R CT 2W R22
R240	ER-735020K	R CT 2W R22
R265	ER-318647	R FUSE H S10 ERD2FC 1/4W 4R7J
R266	ER-318647	R FUSE H S10 ERD2FC 1/4W 4R7J
R267	ER-318647	R FUSE H S10 ERD2FC 1/4W 4R7J
R268	ER-318647	R FUSE H S10 ERD2FC 1/4W 4R7J
R271	ER-735148K	R FUSE 1/2W 220J
R272	ER-735148K	R FUSE 1/2W 220J
R306	ER-735148K	R FUSE 1/2W 220J
R307A	ER-735083K	R FUSE 1/2W 271J [AM-17]
R307B	ER-735085K	R FUSE 1/2W 391J [AM-27]
RJ101	EJ-735018K	PIN J AP6-0034A [PHONO/CD/AUX]
RJ102	EJ-735018K	PIN J AP6-0034A [TUNER/TAPE]
RJ103	EJ-735017K	PIN J AP4-0032A [PROCESSOR]
RY201	EQ-735013K	RELAY HR-CR323D DC24V 2C1P-K
VR201	EV-356579	R S-FIX H RHO615C 0.10W 102
VR202	EV-356579	R S-FIX H RHO615C 0.10W 102

4. TONE CONTROL P.C BOARD

Ref.No.	Part No.	Description
D401	ED-735025K	D LED DLG-503T
D402	ED-735025K	D LED DLG-503T
D403	ED-735025K	D LED DLG-503T
D404	ED-735025K	D LED DLG-503T
D405	ED-735026K	D LED DLR-503T
IC401	EI-201940	IC NJM4558S
IC402	EI-201940	IC NJM4558S
IC403	EI-735047K	IC MC4558C
SW401	ES-735098K	SW TACT KHH10910L0 [PHONO]
SW402	ES-735098K	SW TACT KHH10910L0 [CD]
SW403	ES-735098K	SW TACT KHH10910L0 [AUX]
SW404	ES-735098K	SW TACT KHH10910L0 [TUNER]
SW405	ES-735098K	SW TACT KHH10910L0 [TAPE]
SW406	ES-735027K	SW PUSH SPEC-S-030 [SOURCE/DIRECT]
SW407	ES-735086K	SW PUSH SPEA122SC011 [MODE SW,AM-27]
SW408	ES-735086K	SW PUSH SPEA122SC011 [LOUDNESS SW,AM-27]
VR401	EV-735029K	VR ROTARY RK16K1280 20KBX2 [BASS]
VR402	EV-735029K	VR ROTARY RK16K1280 20KBX2 [TREBLE]
VR403	EV-735028K	VR ROTARY RK16312J0 100KBX2 [VOLUME]
VR404	EV-735030K	VR ROTARY RK16K1180 200KB [BALANCE]

FINAL ASSEMBLY



5. POWER SW P.C BOARD

Ref.No.	Part No.	Description
F501	*EF-601964	FUSE SEMKO T 250V 1.60A
HJ501	EJ-735016K	PHONE J HTJ-064-03D1 [HEADPHONE JACK]
SW501	ES-735014K	SW PUSH TR2122189 2KEY [SPEAKER SW]
SW502	*ES-735015K	SW PUSH SDL-1P [POWER SW]

6. SPEAKER TERMINAL P.C BOARD

Ref.No.	Part No.	Description
ST501	EJ-728479K	TERMINAL 8P AU8-2021

7. FINAL ASSEMBLY

Ref.No.	Part No.	Description
1A	SP-735102K	PANEL FRONT AM-17
1B	SP-735087K	PANEL FRONT AM-27
2	SK-735088K	KNOB VOLUME
3	SK-735089K	KNOB ROUND
4	SK-735090K	KNOB SELECTOR
5	SK-735091K	KNOB POWER
6	SK-735092K	KNOB PUSH (R)
7	SK-735093K	KNOB DIRECT
8	SK-735094K	KNOB PUSH [AM-27]
9	SA-735095K	FOOT (F)
10	SA-735096K	CUSHION FOOT
11	SZ-735097K	LENS (A)
13A	SP-735106K	PANEL REAR AM-17 (E)
13B	SP-735107K	PANEL REAR AM-17 (B)
13C	SP-735108K	PANEL REAR AM-17 (S)
13D	SP-735103K	PANEL REAR AM-27 (E)
13E	SP-735104K	PANEL REAR AM-27 (B)
13F	SP-735105K	PANEL REAR AM-27 (S)
14	SP-735099K	COVER UPPER AM-27
24	SA-735100K	FOOT (R)
25	MA-735101K	BADGE AKAI
26A	*BT-735031K	TRANS POW A74-044Y-V AM-17(E) [E,V]
26B	*BT-735032K	TRANS POW A74-046Z-B AM-17(B) [B,S]
26C	*BT-735001K	TRANS POW A74-045Y-V AM-27(E) [E]
26D	*BT-735002K	TRANS POW A74-047Z-B AM-27(B) [B,S]
32A	*EW-347897	AC CORD 2 CORES VM0364,LCFL EV [E,V]
32B	*EW-346249	AC CORD 2 CORES LCFL2X0.75 B [B]
32C	*EW-347898	AC CORD 2 CORES VM-0436,LCFL S [S]
33	*EZ-692908	STRAIN RELIEF SR-5N-4
35	ZS-322580	ST BID40X08STL BNI
37	ZS-490228	T2BID30X08STL CMT
40	ZS-331182	BT BID30X08STL BNI
41	ZS-352120	T2BR30X08STL BCM C080

AKAI

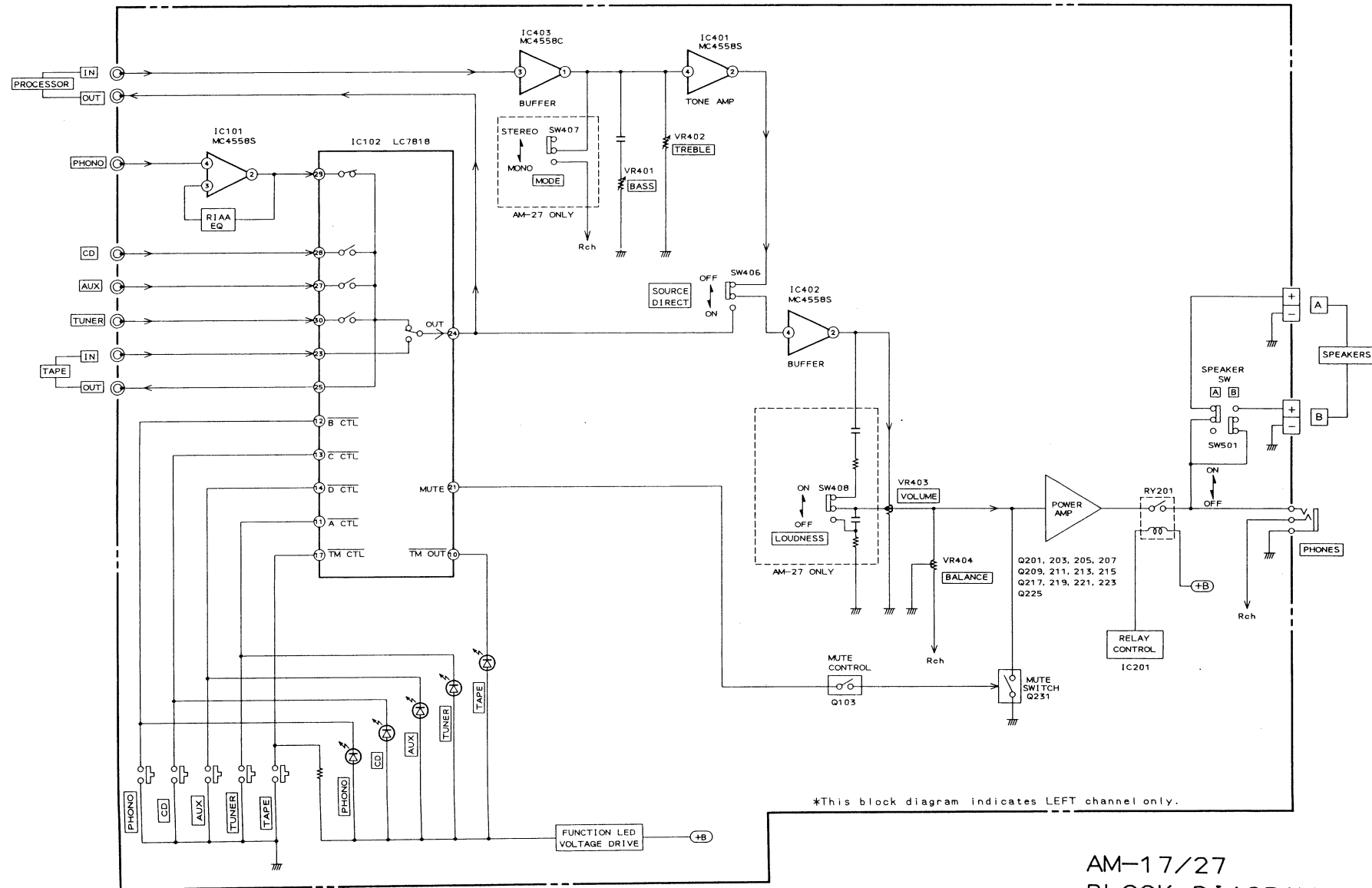
MODEL **AM-17**

MODEL **AM-27**

SCHEMATIC DIAGRAMS AND PC BOARDS

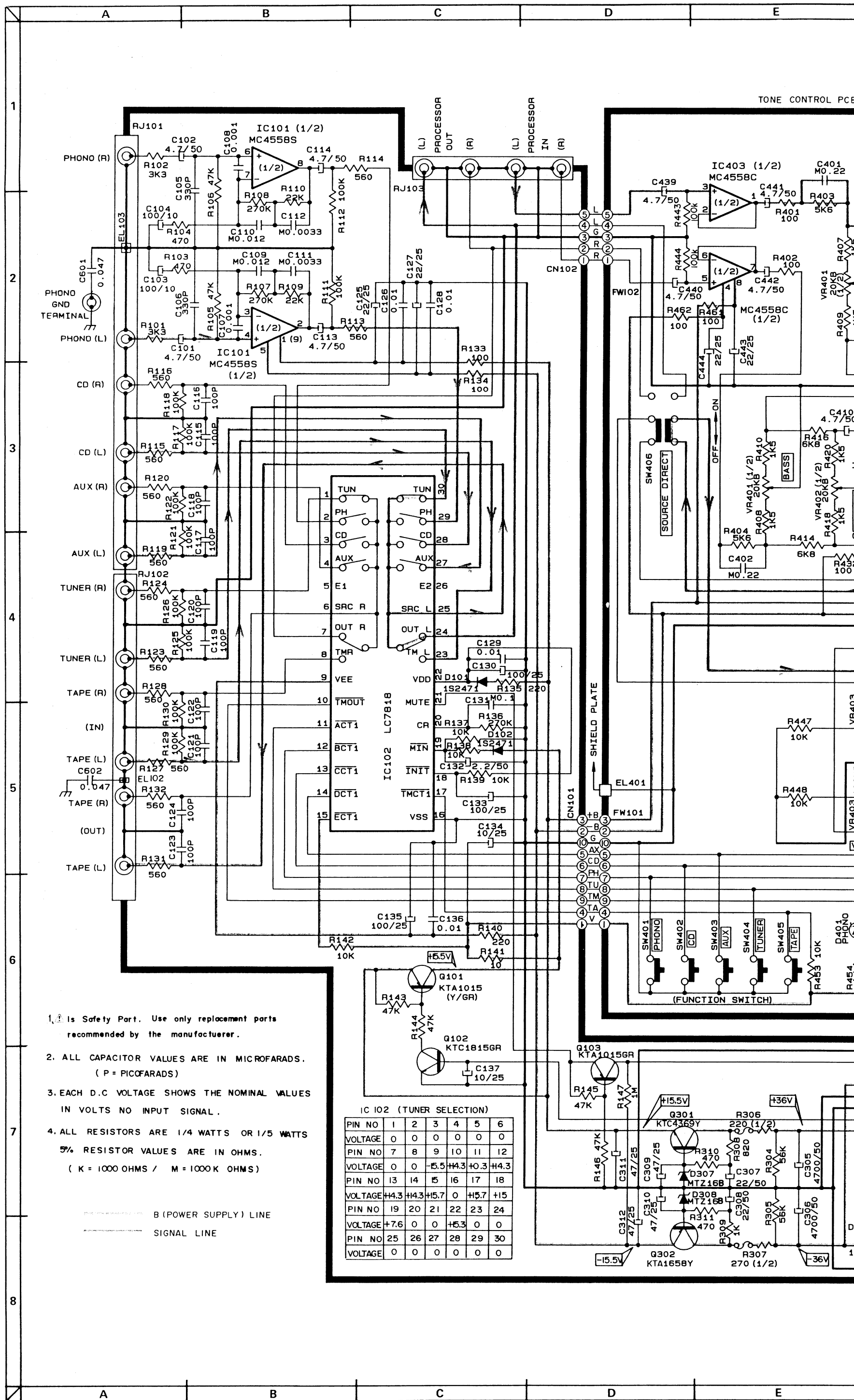
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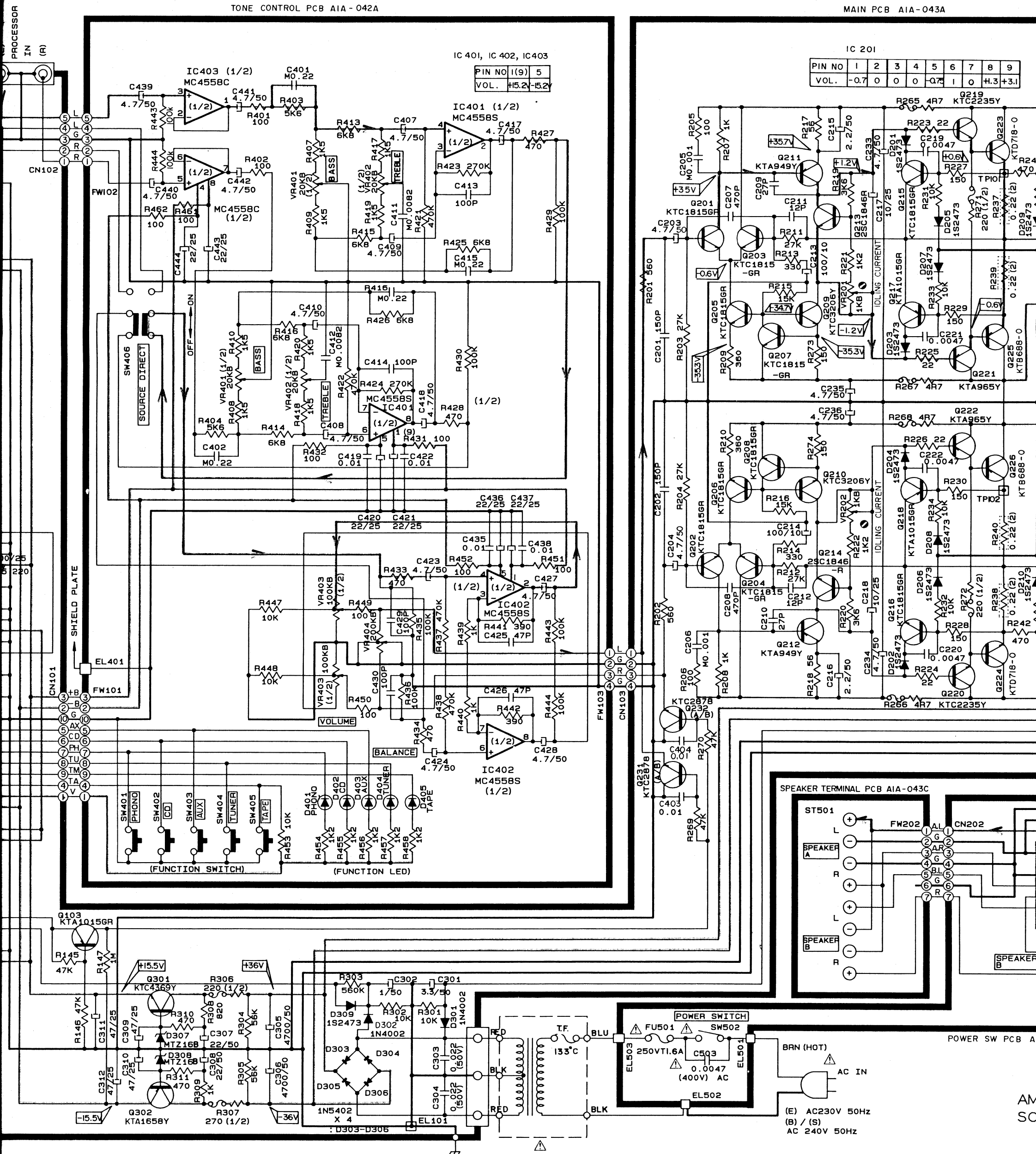
1. AM-17,27 BLOCK DIAGRAM	2
2. AM-17 SCHEMATIC DIAGRAM	3
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4. POWER AND OTHER PC BOARDS	6
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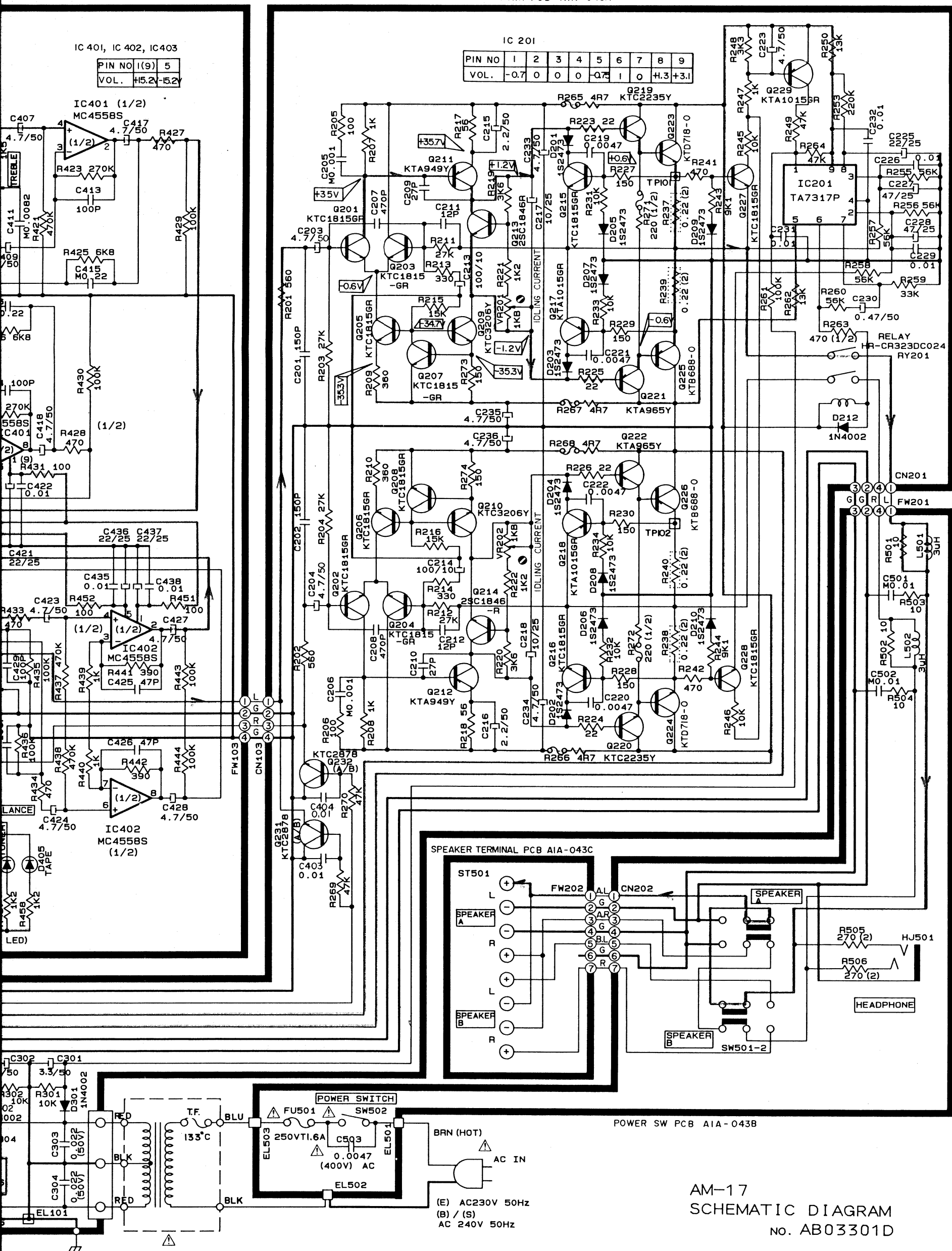


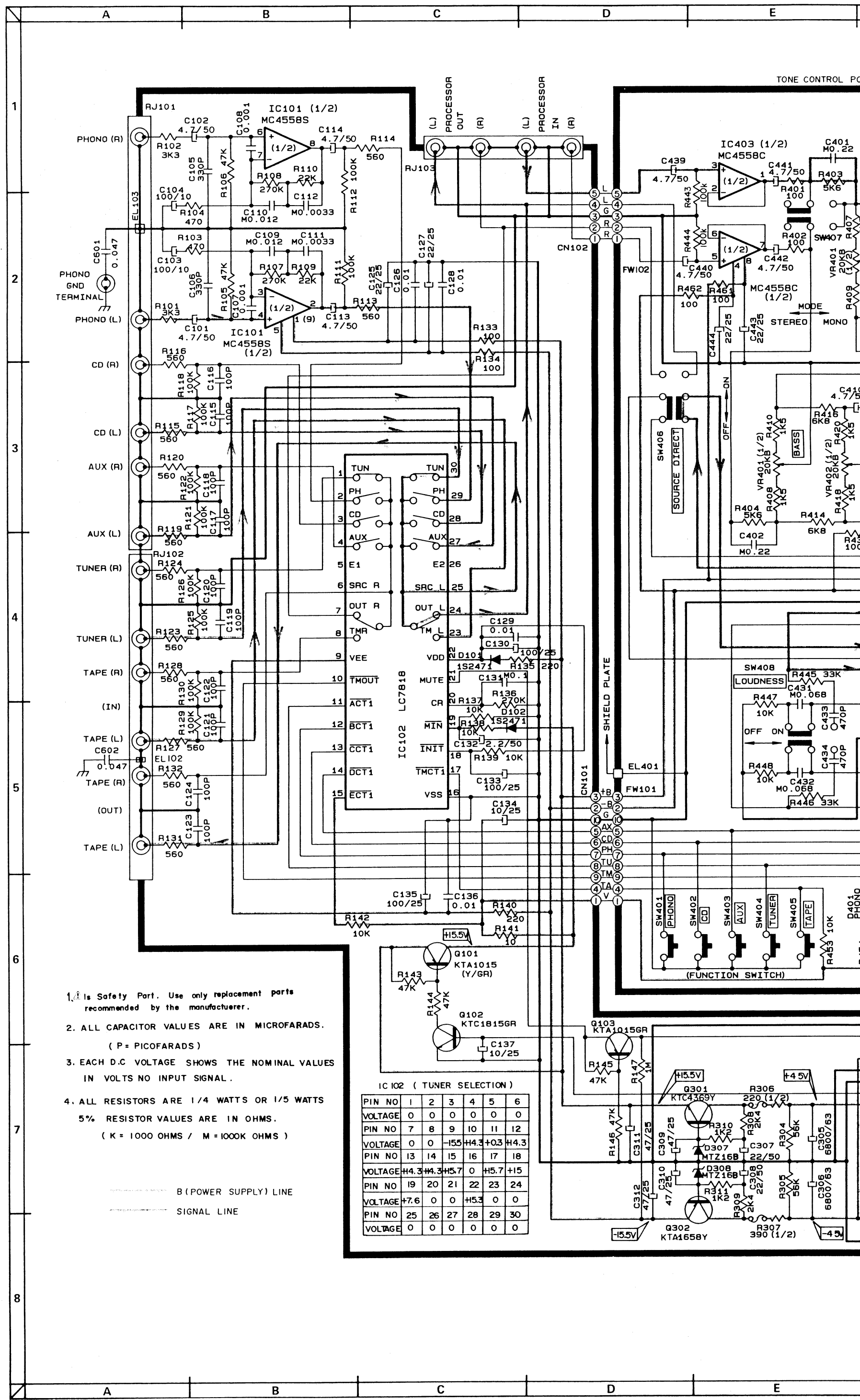
*This block diagram indicates LEFT channel only.

AM-17/27
BLOCK DIAGRAM
No. AB03351M







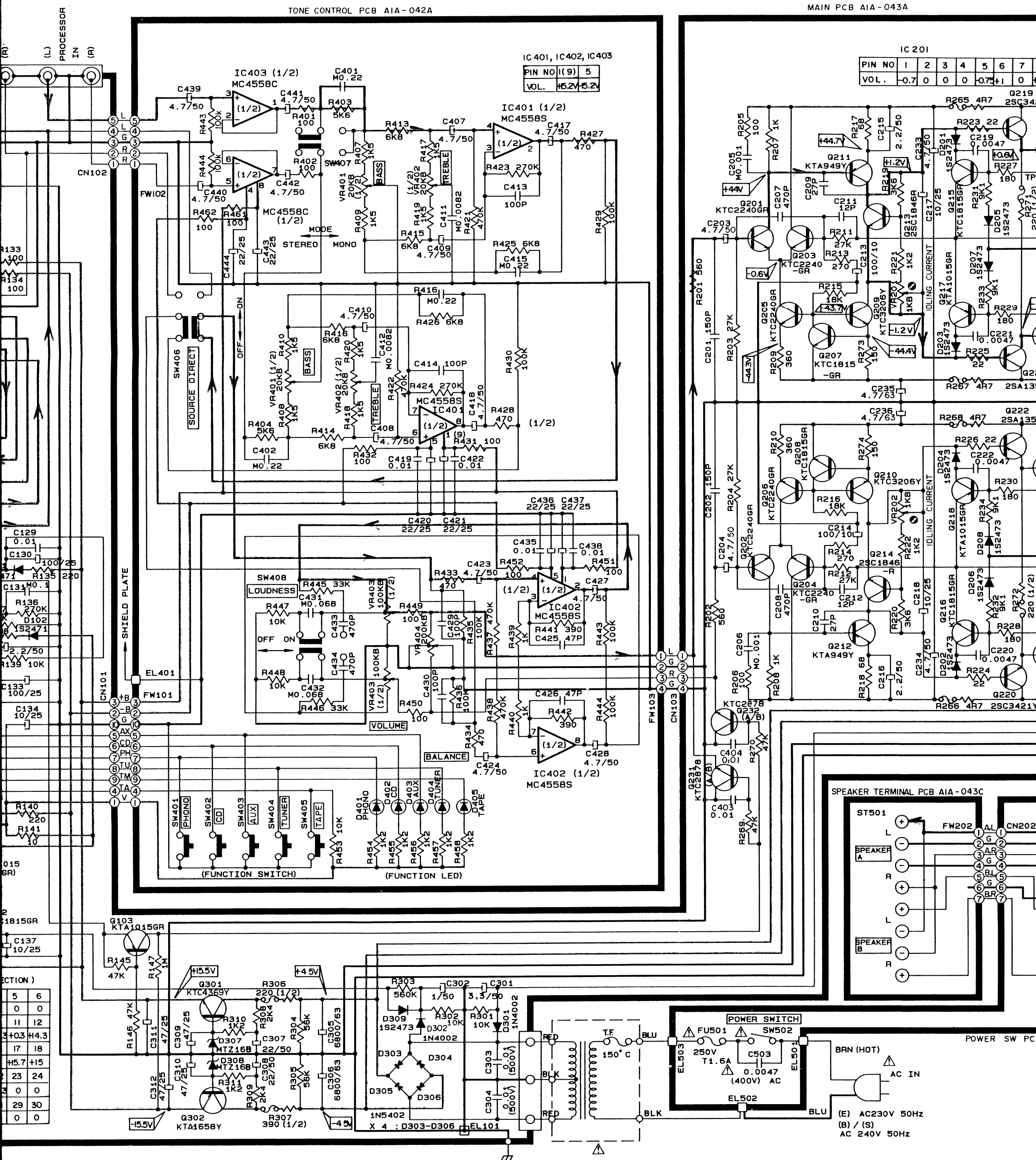


1. Is Safety Part. Use only replacement parts recommended by the manufacturer.
2. ALL CAPACITOR VALUES ARE IN MICROFARADS.
(P = PICO FARADS)
3. EACH D.C VOLTAGE SHOWS THE NOMINAL VALUES IN VOLTS NO INPUT SIGNAL.
4. ALL RESISTORS ARE 1/4 WATTS OR 1/5 WATTS
5% RESISTOR VALUES ARE IN OHMS.
(K = 1000 OHMS / M = 1000K OHMS)

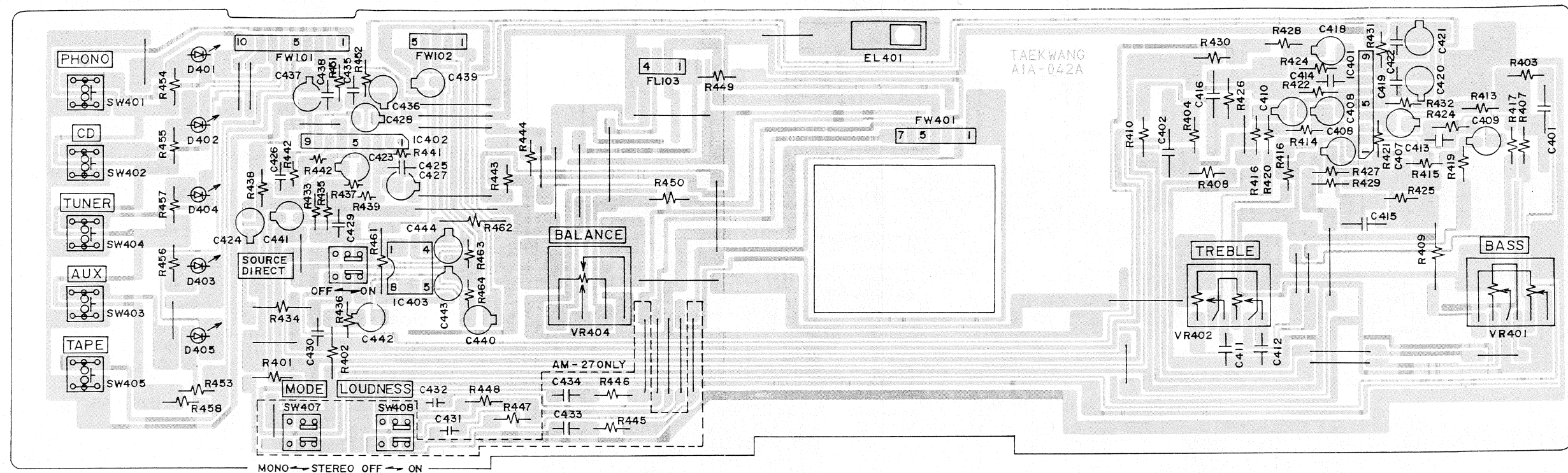
————— B (POWER SUPPLY) LINE
 ————— SIGNAL LINE

IC 102 (TUNER SELECTION)

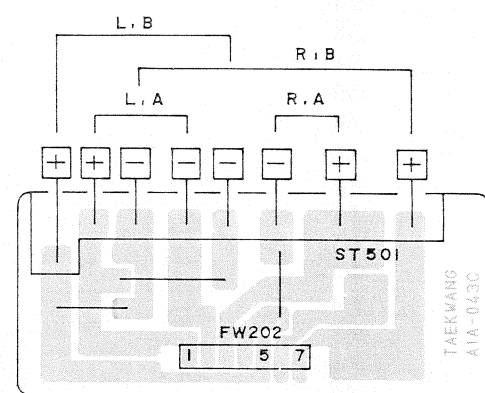
PIN NO	1	2	3	4	5	6
VOLTAGE	0	0	0	0	0	0
PIN NO	7	8	9	10	11	12
VOLTAGE	0	0	-15.5	+4.3	+0.3	+4.3
PIN NO	13	14	15	16	17	18
VOLTAGE	+4.3	+4.3	+5.7	0	+5.7	+15
PIN NO	19	20	21	22	23	24
VOLTAGE	+7.6	0	0	+5.3	0	0
PIN NO	25	26	27	28	29	30
VOLTAGE	0	0	0	0	0	0



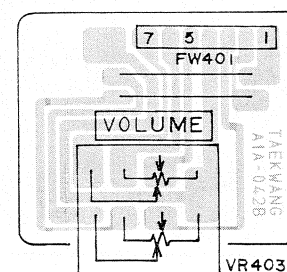




TONE CONTROL PCB AIA-042A

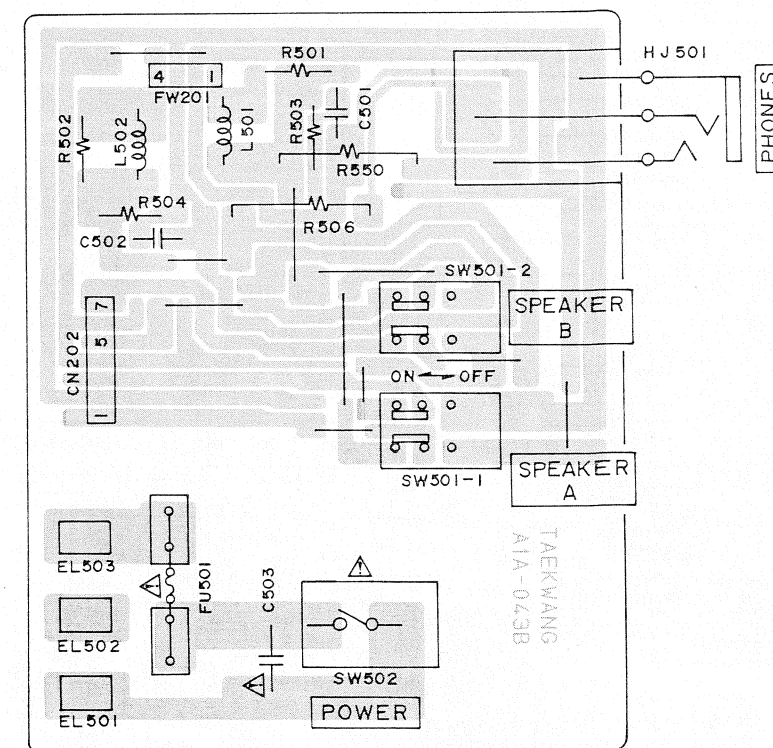


SPEAKER TERMINAL PCB
AIA-043C



VOLUME PCB
AIA-042B

WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.
AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.



POWER SW PCB AIA-043B

ABBREVIATIONS (AMPLIFIER)

ABBREVIATION	EXPLANATION
A	Analog
AC	Alternating Current
AMP	AMPlifier
CD	Compact Disc
COM	COMMon
D	Digital
D/A	Digital to Analog
DAC	Digital to Analog Converter
DAT	Digital Audio Tape recorder
DC	Direct Current
GND	GrouND
L	Left
LED	Light Emitting Diode
MC	Moving Coil
MM	Moving Magnet
PCB	Printed Circuit Board
R	Right
REG	REGulator
REC	RECORD
TR	TRansistor
SW	SWitch
V.AMP	Voltage AMPlifier
V.DISC	Video DISC
VR	Variable Resistance
VTR	Video Tape Recorder